



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/520,406

01/06/2005

Mitsuaki Iwashita

KKH-0034

5490

23353 7590 10/01/2009  
RADER FISHMAN & GRAUER PLLC  
LION BUILDING  
1233 20TH STREET N.W., SUITE 501  
WASHINGTON, DC 20036

EXAMINER

MACARTHUR, SYLVIA

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

10/01/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/520,406	<b>Applicant(s)</b> IWASHITA ET AL.	
	<b>Examiner</b> Sylvia R. MacArthur	<b>Art Unit</b> 1792	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 May 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,8,11 and 17-24 is/are pending in the application.
- 4a) Of the above claim(s) 21-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,8,11 and 17-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1, 8, 11, and 17-20 have been considered but are moot in view of the new ground(s) of rejection. The amendment to claim 1 necessitated the introduction of the prior art of JP 2002-25988 wherein a plasma supply part (34) is located between two suction ports (7,8) see Fig.3, controlling parts VP1 and VP2 control the suction pressure and flow rate of the plasma supply part, see section 005.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 8, 11, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honma (JP 2002-25988) as modified by Yanagisawa (US 6,406,589).

4. Regarding claim 1: Honma teaches a plasma etching device for semiconductor device manufacture having suction ports 7,8 through which unreacted etching gas and waste gas are collected. The apparatus comprises a film removing member including a plasma supply part member (34), see Fig. 3. The plasma supply part 30 is between suction ports 7 and 8. The apparatus of Honma teaches a controlling part that configured to control a suction pressure of the suction port and flow rate of the plasma supplied from the plasma supply part controlling parts VP1 and VP2 control the suction pressure and flow rate of the plasma supply part, see section 5.

Honma fails to teach a rotating mechanism.

Yanagisawa teaches the use of plasma via a plasma generation means 11 to remove a film from the edge of a wafer. Table 3 of Yanagisawa holds and rotates the wafer. See also col.4 lines 7-30.

The motivation to modify the apparatus of Honma to include a rotating mechanism is that the rotation of the substrate assists in the uniform processing of the substrate and as evidenced by Yanagisawa is generally known in the art. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide a rotating mechanism as suggested by Yanagisawa in the apparatus of Honma.

Regarding claims 8 and 11: Honma teaches that the nozzle body 34 is scanned (horizontally moved), via an X-Y moving mechanism see [006].

Regarding claim 4: The processing apparatus as set forth in claim 1, wherein said suction port is provided inside said film removing member and at a position facing the opening, see Figures of Sada et al.

Regarding claims 17-19: The prior art of Honma fails to teach an additional nozzle. It is noted that once a nozzle is provided, what is supplied by the nozzle is a matter of intended use and does not structurally differentiate them. The prior art of Yanagisawa teaches a nozzle 7. The motivation to provide an additional nozzle is to simplify the processing apparatus to allow for several types of processes to be performed in a single apparatus. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide an

additional nozzle in the apparatus of Honma in order to simplify the apparatus to allow for several types of processes to be performed in a single apparatus

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Honma (JP 2002-25988) as modified by Yanagisawa (US 6,406,589) as applied to claims 1, 8, 11, and 17-19 above and in further view of Sadohara et al (US 2001/0032705).

The teachings of Honma as modified by Yanagisawa were discussed above.

The modification further fails to teach the processing apparatus as set forth in claim 1, further comprising: a heating unit for heating the substrate by an infrared ray.

Sadohara et al teaches a local etching wherein a substrate is heated using IR see paragraph [0016] and [0021]. Sadohara et al teaches that it is conventional to heat the substrate during treatment in order to ensure that it remains at optimal temperature. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to modify the apparatus of Honma as modified by Yanagisawa as modified with the IR heater of Sadohara et al.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-Th during the hours of 8 a.m. and 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

September 29, 2009

/Sylvia R MacArthur/  
Primary Examiner, Art Unit 1792